

Lang Litt
20

STATE OF ILLINOIS
WILLIAM G. STRATTON, Governor
DEPARTMENT OF REGISTRATION AND EDUCATION
VERA M. BINKS, Director



GROUNDWATER GEOLOGY IN SOUTHERN ILLINOIS

A Preliminary Geologic Report

by

Wayne A. Pryor

Service activities concerning groundwater are performed jointly by the Illinois State Geological Survey and the Illinois State Water Survey.

This is a

LOAN COPY

of an out-of-print publication
Please return to the

ILLINOIS STATE GEOLOGICAL SURVEY

DIVISION OF THE
ILLINOIS STATE GEOLOGICAL SURVEY
JOHN C. FRYE, Chief URBANA

CIRCULAR 212

1956

EPA Region 5 Records Ctr.



358705

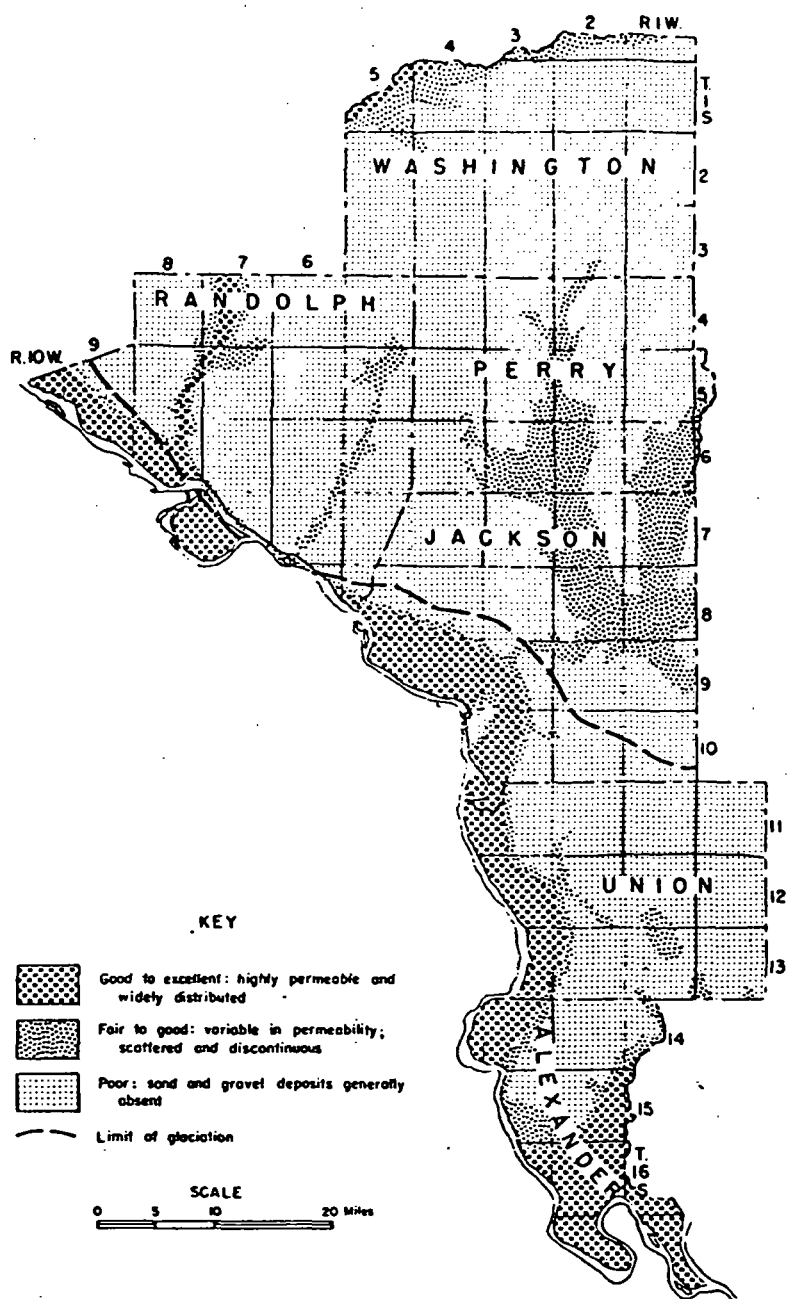


Fig. 6. - Probabilities of occurrence and distribution of sand and gravel aquifers.

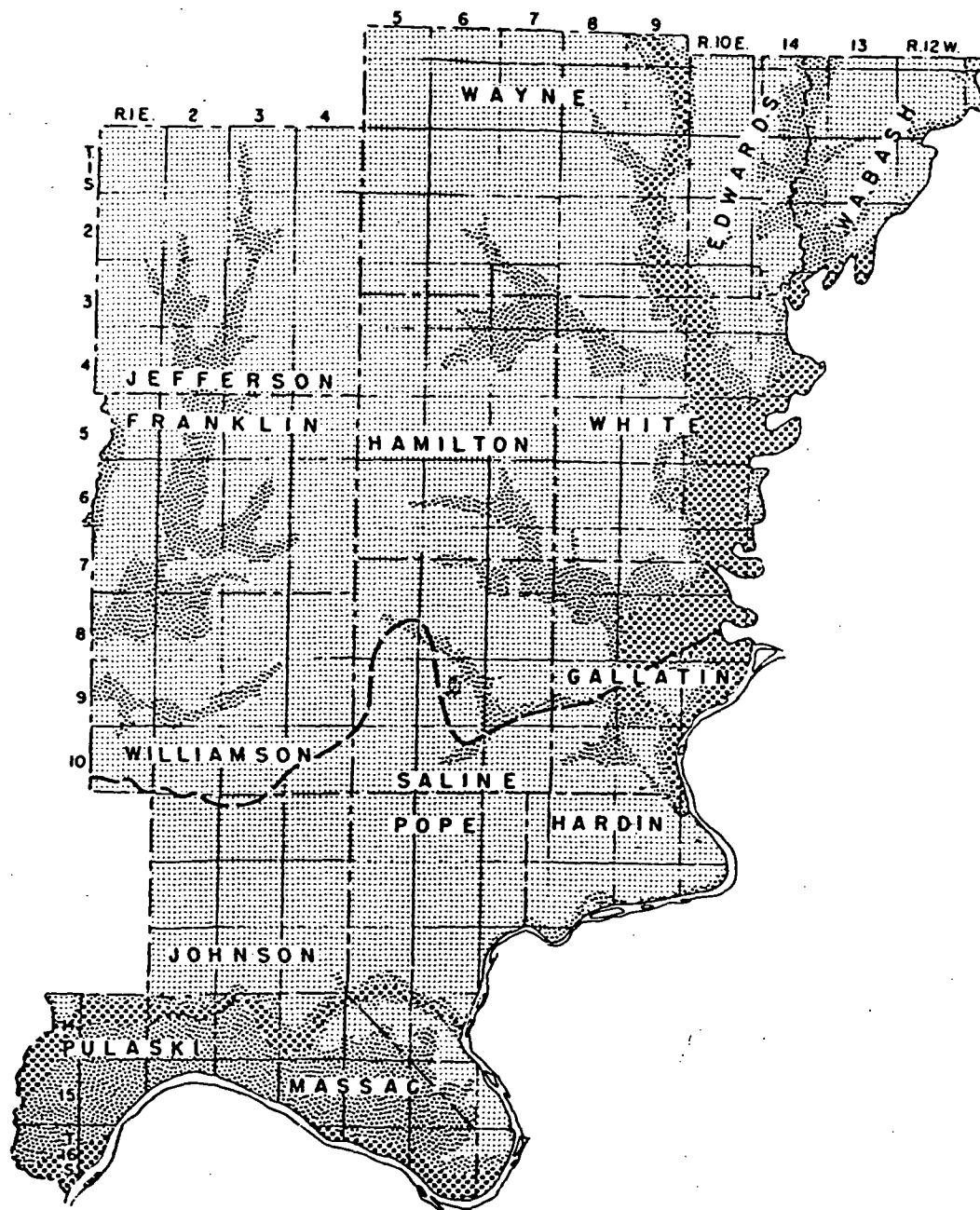


Fig. 6. (continued).

Pulaski County

In Pulaski County the thickest, most permeable sand and gravel deposits are in the Cache and Ohio river valleys. Thick deposits of Tertiary and Cretaceous sand are present on the uplands in central and eastern Pulaski County. These sand and gravel deposits are excellent sources of groundwater, especially in the valleys.

Underlying the unconsolidated deposits, the well-creviced Valmeyer limestones are water-yielding and good sources of groundwater for municipal and industrial supplies. The creviced Devonian limestones, dolomites, and cherts in southern Pulaski County are sources of groundwater for municipal and industrial supplies although they generally are deep, as much as 900 feet deep north of Mound City and deeper at Cairo.

Randolph County

The upland in Randolph County contains thin glacial deposits unfavorable for drilled wells in sand and gravel. Thick permeable sand and gravel deposits occur in the Mississippi Valley and are favorable for sources of industrial and municipal groundwater supplies. Some favorable deposits also may be present in the Kaskaskia Valley in the northwestern part of the county. Thin discontinuous deposits of sand and gravel are present in the valley fill of Marys River.

Drilled wells in the upper bedrock obtain groundwater from Lower Pennsylvanian sandstones in the northeastern half of Randolph County. The depth to these thick sandstones ranges from less than 100 feet along the western border of Pennsylvanian outcrop (fig. 6) to over 600 feet east of Sparta and Percy. Chester rocks are water-yielding for a slight distance east of the Pennsylvanian border, but the distribution of these water-bearing strata is not well known. Aux Vases sandstone is water-yielding in the northwestern part of the county and is a source of water for industrial and municipal supplies in restricted areas. Domestic supplies are obtained without difficulty from Chester beds where they underlie the glacial deposits.

~~Saline County~~
Glacial deposits are thin in Saline County. Sand and gravel wells are constructed only in the valley fill of the Saline River, where some thin discontinuous deposits are present.

~~Most domestic wells obtain water from sandstone strata in the Pennsylvanian system. These water-yielding sandstones are present at depths of 200 to 300 feet in the northern part of the county. South of this, in the water-yielding sandstones, are at depths below 300 feet.~~

Union County

Sand and gravel deposits in the Mississippi Valley are thick and permeable and suitable for municipal and industrial water supplies. Some possibilities exist for obtaining domestic supplies of groundwater from thick deposits of Lafayette gravel (fig. 4) in an area southeast of Jonesboro (fig. 6). Some thin continuous deposits of sand and gravel are present in the streams tributary to the Mississippi River.